Mathematics of climate change: New challenges

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Climate models solve the equations for the conservation of momentum, mass and energy in the atmosphere and oceans, the equations of state for air and for sea water, as well as equations for energy and water exchange with the land and cryosphere. This talk reviews the mathematical basis of climate models, and presents new challenges in the development of climate models, their applications in assimilating vast volumes of satellite data, as well as in the estimation of the uncertainties in climate projections.

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